302 could paint his face any way he liked if he did not want to follow a totemic pattern. After ceremonial washing a man's face was covered with red paint; sometimes a little white paint was put on a woman.

The following information is from Mr. E.W. Gifford, who kindly put his data on Tachi moieties at my disposal.

302 The Tachi employed moiety face paints. The
616 toxelyuwic painted a "pink" stripe of wild rose-
bush powder[48] from the edge of the hair on the
forehead down to the tip of the nose, and a
[824] horizontal stripe under each eye. A small black spot was added under each horizontal stripe of pink.

The nutuwuts moiety painted the right side of the face solid white, the left solid black. No spots were added.

It seems probable that the informant who gave these data described patterns characteristic of some animal (lineage totem) associated with each moiety. There is no suggestion of specific moiety patterns from any informants of
[613] moiety-divided tribes. The lineage is the essential unit; but if forced to characterize moieties, an informant will choose some important animal (lineage totem) of each, most frequently Coyote and Eagle. Without further detail being given, it would appear that all persons of one moiety or the other had these animals as totems. I believe it is thus with the two paint patterns described to Gifford: that the informant oversimplified.

Money Manufacture

436 The shells for money were obtained whole from the Tokya (Chumash, Salinan, or other
● 321 coastal people to the west). By laying them on
[439] a rock and giving them a sharp blow with a stone held in the hand, they were broken up into several parts, which were again cracked into smaller pieces by the same method. Each piece was given a circular shape by rubbing down its edge on a large, flat, hard rock. The
[412] discs were then drilled by means of a drill (wa'lai) of bone which was imbedded in the end of a button willow stick. The palm of the left
[237] hand,[49] gummed with fish glue, rolled the drill on the left thigh while the right hand pressed the disc against the rotating tip.

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[48] Concerning the possible derivation of this powder Professor H.L. Gardner, of the University of California, writes me (Gifford): "There is a fungus growing on certain species of roses which causes distortions in the branches of the rose, such distortions being filled with masses of orange colored spores. It is barely possible that these might make a temporary pigment."

[49] Practices with the left and right hands are uncertain with this informant, who is herself left-handed.

depths of water. The handle (hoiă) was of elderwood. According to one informant (J.P.) the handle (more probably a part of the handle) could be detached entirely if one was working under bushes, but this does not agree with other information. Two hollow shafts of deer tibia (to ´koi) were lashed on one end, and into these were fitted bone points (pi ´če tu ´h'na) about 2 inches long. A cord with about 2 feet of "play" leashed the point to the main handle. The point was essentially a toggle when freed from its housing, the attaching cord usually being fastened to it by wrapping and sealing with pitch or asphalt.[182]

A separate harpoon point in the University of California Museum of Anthropology (1-10422) has a cord 28 inches long, is of bone, and is 3-3/4 inches in length. Another (no. 1-3954) is a one-piece togglehead, slightly over 3 inches long (79 mm.) of iron or steel; is perhaps a tine from a rake. A 2-ply cord is laid against the middle of this and probably lashed around several times and then is fastened to the metal by a dark substance which may be asphalt or pitch. It has in it grains of some mineral substance which looks like feldspar from decomposed granite. (These might be a by-product from the melting of the gum.) The length of the free string is about 21 inches.[183] Both specimens are from the Chukchansi Yokuts.

Weirs of willow were set across rivers or streams at suitable places. The willows used were about finger thickness and 3 feet long. They were interwoven with willowbark rope. Into the weir and facing upstream were set cylindrical baskets 6 to 10 feet long and 12 to 18 inches in diameter; as many as three of these might be used. If fish were needed in a hurry, men, women, and children would wade downstream driving fish ahead of them into the basket traps. Ordinarily the baskets were left overnight, when sufficient fish would have accumulated in them by morning.

A favorite method of catching fish in pools was by stupefaction. Two plants were used. One, ta ´dad, was a plant which grew near streams. It was mashed fine, put in sifting baskets, and shaken out over the surface of the water. This "made the fish crazy"; as they jumped about near the surface they were grabbed in the hands and scooped up in large openwork baskets. The other plant, ya ´oha, "grows on the mountains." It was soaked in water and mashed with a stick, and the mass put in the fishing hole. The person who performed this service was facetiously referred to as a doctor (añṭu). Kroeber mentions two other

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[182] One informant claimed the point was drilled and the cord tied through the hole. This seems unlikely as no such attachment is reported from any other Yokuts or neighboring tribe.

[183] Description, kindness of Dr. A.L. Kroeber.

321 412 Deer bone awls (poa''uk, M.L.; ap''up, M.P.) were wanted by all women who made baskets and, as there was no tabu on their use for any convenient purpose, others owned them as well. About three sizes were wanted, ranging from 3 to 6 inches.[194] They were made by men from deer fibulae (see pl. 1, floor center).

324 412 An assortment of obsidian blades, also made by and bought from men, was wanted for cutting meat, scraping foodstuffs and basketry materials, and cutting hide.

428 [584] 285 431 Women came by these possessions in a variety of ways. When a boy's family approached a girl's family with betrothal gifts, a burden basket was frequently included as this was an object of value and a type which a young girl could not make for herself. By the time she was betrothed, however, a girl usually had already made herself smaller twined and coiled ware of the seed-beater, winnowing tray, and sieve types. Her mother or aunts (of either side of family) would make her additional baskets, particularly the twined cooking basket.

428 [764] Girls or women inherited from their mothers many of these household utensils; but it was said that "there weren't so many of these" (M.L.) by the time a few things had been put with the corpse and the rest were divided between daughters and claimed by the mother's sisters. Again it was impossible to formulate a rule whereby these objects were gotten or inherited. [437] Women bought utensils and tools from each other and also from men. A woman's husband was expected to supply her with meat and skins. The latter included deerskin for the dress apron and, if the man were a poor hunter and could not procure them himself, he might even buy the deerhoofs used as a decorative fringe on the apron.

Medicines

757 278 The two plants used for poisoning fish (yaoha and tadad) were also used medicinally. The first, for chills or headache, was mashed in a poultice; the second was boiled for use as a steam bath for chills or to soothe the vaginal tract after childbirth.[195] Neither plant was actively poisonous as fish stupefied by them did not need any special treatment before being eaten.

Black paint (ka'di'an) was mixed with grease as a salve. It was applied to sore

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[194] Thirteen awls collected by Dr. Barrett from Michahai, Choinimni, and Chukchansi territory, now in the University of California, Museum of Anthropology, range in size from 3 inches (1-10839) to 7 inches (1-3997). Three unfinished awls from Drum Valley (probably Chukaimina or Michahai) are 5 3/8, 5 1/2, and 7 3/4 inches (1-10850, 1-10838, 1-10837).

[171] [195] The Miwok used vinegar weed (Trichostema lanceolatum Benth.) as a steam treatment for "uterine trouble" (Barrett and Gifford, 174).

411 Arrows were of an unidentified wood.[113] For the sinew-backed bow they were about two feet, six inches in length. Three split feathers were fastened on with wet sinew; these were slightly spiraled to make the flight straight.

The same type of bow and arrow was used for fighting as for hunting, said J.R. "You can't shoot very far with an arrow; it doesn't go straight. You have to shoot high, let it come down on the target. They can shoot farther but can't kill anything if it is very far off."

[324] The recorder saw four arrowheads at the Wyatt's place. These were called flint, but Thrall thinks they were of obsidian.

Four Chukchansi arrows in the Peabody Museum (specs. 76475) are of cane with inserted foreshafts. Their dimensions are: (1) shaft, 26-1/2 in. plus 5-in. foreshaft; (2) shaft, 29-1/2 in. plus 7-in. foreshaft; (3) shaft, 30 in. plus 7-in. foreshaft; (4) shaft, 30-1/2 in. plus 7-in. foreshaft. Sinew wrappings on forward ends where foreshafts are inserted measured: (1) 1-1/4 in., (2) 1-1/4 in., (3) 1-1/2 in., (4) 1-1/2 in. Three vanes of feathers, not spiraled, on each arrow are trimmed straight off at the butt ends. They ride free from the arrowshaft except for the binding at each end; their free lengths are: (1) 2-1/2 in., (2) 2-1/2 in., (3) 3 in., (4) 3 in. All the shafts are 3/8 in. in diameter.

MISCELLANEOUS DATA

501 Boats and weirs.---There were no boats or rafts for crossing rivers. Only in play would boys sometimes get logs, roll them in the water, and ride downstream on them.

227 In Chukchansi territory Powers saw fish weirs with inserted traps into which fish were driven from upstream by means of a brush sweep similar to that of the Wobonuch (fig. 3, b); see below. They also speared fish from a booth over the water like that described by Mayfield for the Choinimni.[114]

436 Money.---Several kinds of beads were shown Miss Thrall by M.W. and C.D. who said they were 321 "grave beads" and named them as follows. The descriptions are Miss Thrall's.

Supna: cylindrical white bead, 1/4-in. long, same diameter, small hole through center. Said to be cut from a larger bead about an inch long. One bead (long or short?) was worth a

[824]

[113] From a bush which grows beside creeks, is something like willow, but has a nearly round serrated leaf. The wood is straight and tough. It is not common, just a few bushes grow near J.R.'s place. It grows about 8 feet tall "like an elderberry."

[114] Powers, Tribes of California, 376.

436 dollar.[115] The informants were uncertain about
321 the material, merely saying that the beads were
made far off at the ocean. Later N.W. said a
string of these beads, which would encircle the
[804] flat hand, was worth 50 cents. This standard
measurement of beads, the circumference of the
flat hand, was called kelan or k'ečan.

hakemesha: darkish red, white center, 1/4-in. long, 1/8 in. in diameter, though Emma Pumpkin said they "used to be about 3 inches long". These were said to be of "a bone naturally white inside and red outside." Thrall thought they looked like china.

lišaniu: blue, looked like glass with cut facets. Informants claimed they were "some kind of bone that lives in the ocean" and that the facets were made by being cut with obsidian.

Unnamed: black inside, brownish red out-
[323] side. Thrall thought these looked like baked clay. One was pinkish inside and speckled red outside, which the informant said happened when the bead was burned [fired clay or in cremation?]. These beads were pointed out as especially old.

A dark green bead which came from the sea was described by J.R. He said these were strung with long white beads in between "to make it pretty and hold the beads together." He said this cylindrical bead was a certain rabbit bone, long, straight, hollow, and white [possibly the clamshell hinge; possibly a local substitute. -- A.H.G.]. A length of bead money
[804] which was measured from the center of the wrist around the edge of the extended hand was worth a fixed sum. Such money, in definite units, was used to pay for baskets and for any object, services, etc. While goods were used for payments or for trade, money was the preferred tender.

436 Soapstone beads 1/2 to 3/8 in. in diameter
324 and 1/8 in. or less long, with a 1/16-in. perforation, were "made in a belt" and traded for a basket, said M. M. had ten such beads she had found on the ground around Picayune. She did not know how they were made, but claimed they were native. [Perhaps these beads were worked into belts like those of Yokuts to the south; perhaps however, M. really meant strings of bead money. -- A.H.G.]

276 Tobacco.--Old people watched for the tobacco plants to ripen. When full grown but still green, the leaves were gathered, dried out somewhat; it remained a greenish color. The leaves were stored in a dry place, a little being taken out to smoke as wanted. "It smelled pretty near like white [man's] tobacco," said J.R. A tobacco of sweeter variety than that at Coarse Gold was said to grow farther north.

Cakes of tobacco were made from the dried leaves, pulverized and mixed with water. These little biscuits were two or three inches across,

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[115] An exorbitant sum, perhaps named in the hope that Thrall was going to buy. The impression is made that none
[487] of these informants knew anything about bead money. Their
439 statement that the obviously Spanish beads came from the ocean is entirely reasonable since that was the aboriginal source for all bead money, and Spanish beads came via the same trade route in native hands. -- A.H.G.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

They were also placed over the eyes, ears, and/or 436
mouth of the dead, as Ichow stated, "So that dead person could 301
see, hear, talk good in *Tihpiknits'* (keeper of the hereafter) 764
Pahn (land)." Such use of Tahp has been found in some of the most ancient burials discovered in Yokuts territory, which indicates that it had long been valued by the ancestors of those people.

The most valued of all Yokuts money was made from the 436
shell of the famous Pismo clam. Most of this Pismo clam shell- 439
money was probably traded through Cuyama Valley from Canaliño neighbors to the southwest. Tejon informants have stated to me that the word, *Cuyama*, was the Canaliño name for the Pismo clam shell and that the Cuyama Valley was the channel through which these shells were traded to the Yokuts. Curiously enough, clam-shell ornaments are less common in adjacent Yokuts territory than they are farther north in Chunut Yokuts territory. My informers concerning the above were Rosa and Ramon Hino and Juan Losada of Tejon Canyon. Wahumchah, one of the last two living Yowlumne Yokuts, has told me that his tribe obtained their clamshell money through the Cuyama. Wahumchah's father and grandfather were both traders and his observations along these lines should carry more than ordinary weight.

I have heard no claims made that Pismo clam shell-money 436
had any curative or preservative powers, only that it had great 764
value as money. This is borne out by the use made of it in Yokuts burials. It was almost always placed in the mouths of the dead. *Yoimut*, an aged Chunut, once stated to me, "To pay them bad fish-people to let the dead person cross that narrow bridge to Tihpiknits' Pahn. They put it in the mouth so that dead person don't lose it and he sure to have it when he get to Tihpiknits' Pahn."

The Pismo clam ornaments were of three standardized 436
shapes and had holes drilled through them. Discs were made 321
in sizes from more than two inches in diameter to less than one- [531]
half inch. The edges of most of these were decorated with incised geometric forms in several designs. Indications are that the incisions were originally rubbed full of asphaltum. This bright black material contrasted strikingly with the white of the clam shell and made them the most spectacular and impressive forms of stone or shell money, or ornaments produced by the Yokuts.

½ [i.e., spangles and ornaments of abalone shell.—Analyst]

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

436 From the Pismo clam were also produced nicely smoothed
●321 and rounded curved objects with pointed ends. These were drilled from the pointed ends, the opposing holes meeting at the middle. I have never seen one of these objects taken any place in Yokuts territory, except from the mouth cavity of a buried skeleton.

Slender, straight-sided tubes were also made from Pismo clam-shell. They varied from three-eighths of an inch in diameter and three inches long, down to one-fourth of an inch in diameter and less than one inch long. Some were not cylindrical, being larger at the middle than at the ends. The Wukchumne Yokuts called these *Cutscotch* (Coots'-cotch).

The most valued of all clamshell money were long, curved tubes. These varied with the size of the shell, the largest being more than six inches in length. They were slightly wider than they were thick and were perforated lengthwise. This perforation is the most remarkable feature of all Yokuts manufactures.

The shell of the Pismo clam is as hard as the glaze on a piece of china. To drill two opposing holes, each three inches deep, through such material, having them meet in the middle, is a feat worthy of modern tools in the hands of a practiced mechanic. Mayfield, who was a white man raised by the *Choinimni*
[439] Yokuts, stated to me that an old artisan of that tribe obtained in trade slender objects which he (Mayfield) believed were "walrus, or sea lion whiskers." The large ends of these were pounded between two rocks, forming a sort of short-bristled brush. A shallow hole was drilled with a stone-pointed drill as a starter. Fine, sharp sand was placed in this hole. Then the brush-pointed "whisker" was placed on top of the sand and spun between the palms of the hands. Mayfield had not seen the Pismo clam money drilled in this manner, but had seen other hard objects so drilled. From Ichow I learned that an identical process was used by the Wukchumne and Yokodo. The only variance was that no "whisker" of any sort was used. The drill was made from the slender chamise-root splint used in reducing
[412] the square steatite beads to a round form. Said Ichow, "That old fellow take piece of green chamise root and scrape it just about this size [illustrating with a piece of ordinary bailing wire which he picked up beside his chair and which he continued to hold in his hand as he talked]. Then he hold this piece root over fire and scrape and dry him good and straight and hard like

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

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this wire." A brush was pounded on the end of the chamise-root splint and use made of it exactly as described by Mayfield.

In my collection of Indian artifacts are a number of these Pismo clam-shell tubes that had been broken before they were placed in the mouths of the dead. In a number of cases it is clearly shown that the two opposing holes did not at first meet at the middle. In the correction of this error was involved the most surprising feat exhibited in all Yokuts manufactures. The drill was diverted so that a branching hole was made and the two holes did meet. This was done so as not to be visible until the tube was broken.

The common Yokuts name for the Pismo clam form of Yokuts money is *Humana* (Hoo-mah'-nah).

10: Beals & Hester E-4, 5 (no date) 1958
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did not secure enough rabbit skins for their own needs, securing additional skins in trade from the east.

These conclusions are supported by data from the only large archeological excavations in the near vicinity, on Buena Vista lake to the south, with very similar environmental conditions. Wedel reports that at one site in 3700 cubic yards excavated only 1053 animal bones were recovered. Of these, 411 were bird bones and 142 terrapin bones. Elk and antelope numbered 61 and 45 respectively. Two hundred and one rabbit bones were found, most of them jack-rabbits (*Lepus*). In contrast to the small number of elk and antelope bones, bones from the genus *Canis* (probably mostly domestic dogs, but including some coyote) numbered 127.[12]

The Tachi, to some extent, were middlemen in the trade of sea shells from the ocean to the interior and are reported to have done some processing of ocean shells secured in trade from neighbors to the west. Considering their environment, the Tachi apparently were dependent upon their neighbors, especially those to the east, for the following items: obsidian, steatite, stone mortars, oak mortars, pestles and sinew backed juniper bows. In addition, they traded for pottery, basketry, pigments, rabbitskins and rabbitskin blankets and acorns. In exchange they provided lake products including fish, tule mats, salt from salt grass and shell "money" they manufactured from shells secured in trade. That the lake resources were important is indicated by the fact that, although some Yokuts' neighbors were allowed to visit the lake themselves, trade with westerners was carried on at a distance from the lake apparently in part with the intention of preventing them from learning the techniques of securing the products.

The picture emerges clearly, then, of a desert-dwelling people who, paradoxically, were oriented toward a water-based economy. Without the lakes, marshes, and sloughs, the land would have supported only the scantiest population, and, in fact, large areas, especially to the west, were rarely visited. For the Tachi the acorn appears as a relatively unimportant luxury and not as a staple.

If we turn to non-material culture, the differences between the lake dwellers as exemplified by the Tachi, and the acorn using Yokuts to the east, largely disappear. In the existence of "tribes" sharing a common dialect and capable of common action, the existence of semi-

[12] WEDEL, p. 11. The remaining data on the Tachi and their neighbors are from Gayton, Kroeber and Latta.